

REMARKS

I. Introduction

In response to the Office Action dated June 23, 2005, claims 20-25, 27-28, 32-35, 37-40 have been amended and claims 55-74 and 78-81 have been withdrawn. Claims 20-40, 55-74 and 78-81 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. Non-Art Rejections

In paragraphs (2)-(3) of the Office Action, claims 20-40 and 55-81 were rejected under 35 U.S.C. §112, second paragraph, because of "undue multiplicity." Specifically, the Office Action asserts that Applicants present an unreasonable number of claims which are repetitious and multiplied, the net result of which is to confuse rather than clarify the claimed invention. The Office Action suggests that Applicants select three groups of claims.

In response, Applicants' attorney selects the following three claim groups, namely claims 20-36, 37-39 and 40, and withdraws the remaining claims. However, Applicants' attorney does so with traverse. Applicants' attorney notes that these claims have already been examined, that the current Office Action is the second Office Action to address these claims, and that no amendments or new claims have been made that would introduce such "confusion" in this application. Consequently, Applicants' attorney requests that this rejection be withdrawn. Moreover, this response is intended to preserve Applicants' right to have the rejection on undue multiplicity reviewed by the Board of Patent Appeals and Interferences (BPAI), as set forth in MPEP 2173.05(n).

Also in paragraphs (2)-(3) of the Office Action, claims 20-25, 27, 28, 32-35, 38 and 39 were rejected under 35 U.S.C. §112, second paragraph, because of insufficient antecedent basis for various terms.

Applicants' attorney has amended the claims as indicated above to overcome these rejections.

IV. Prior Art Rejections

A. The Office Action Rejections

On page (3) of the Office Action, claims 20, 21, 23, 34, and 36 were rejected under 35 U.S.C. §102(b) as being anticipated by Ward, U.S. Patent No. 4,636,947 (Ward). In paragraph (10) of the Office Action, claims 22, 24-33, 35, 37-40, 55-74, and 78-81 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ward in view of Kraslavsky et al., U.S. Patent No. 5,537,626 (Kraslavsky).

Applicants' attorney respectfully traverses these rejections.

B. The Ward Reference

Ward describes a method and apparatus for reducing customer transaction time in an automated teller machine (ATM) having various peripheral devices associated therewith. Each peripheral device associated with the ATM; e.g. a card handler mechanism, a printer mechanism, one or more cash dispenser mechanisms, and a depository mechanism, include a dedicated processor and memory for controlling the operation of the peripheral device connected thereto. The ATM also includes a peripheral control unit connected to the various subsystem controllers and to an ATM control unit for receiving generated transaction sequence event messages and in response thereto concurrently processing the messages to initiate simultaneous real-time operation of the various peripheral devices. For example, the concurrent processing of transaction sequence event messages allows completion of the card ready activity, entry of a customer PIN and printing of the customer receipt header to take place simultaneously. This parallel activity of the peripheral devices reduces the elapsed time for a customer to complete an ATM transaction.

C. The Kraslavsky Reference

Kraslavsky describes an apparatus for coupling printer with LAN to control printer operation by transferring control parameters, printer status data and printer configuration data between printer and LAN. Specifically, Kraslavsky describes a method and apparatus for interfacing a printer to a local area network utilizes a circuit board coupled to the printer. A Small Computer System Interface (SCSI) is disposed on the board for transmitting print data to the printer and for receiving printer status data from the printer. A RAM is also disposed on the board, for storing the print data, the printer status data, and a plurality of application programs. A Local Area Network (LAN) interface is also disposed on the board, for receiving the print data from the LAN, and for

transmitting the printer status data to the LAN. A processor is disposed on the board, for executing the plurality of application programs to cause the print data to be transmitted to the printer and the printer status data to be transmitted to the LAN. Preferably, printer control data may also be transmitted over the LAN to control printer functions.

D. Applicants' Claims Are Patentable Over References

Applicants' invention is patentable over the references, because the claims recite limitations not found in the references.

Nonetheless, the Office Action asserts that Ward teaches all the elements of the independent claim and some of the dependent claims, while Ward combined with Kraslavsky teaches the remaining dependent claims. Specifically, the Office Action states the following:

5. Regarding claim 20, Ward disclosed, a self-service terminal comprising a plurality of peripheral devices each of the peripheral devices having an independent associated control application, the control applications being operable to communicate with each other, whereby, in use, a peripheral device operates in response to a signal generated by another peripheral device (Ward, col. 2, lines 35-60 and Fig. 2, Ward teaches a terminal in a network where each of the peripheral devices include a subsystem controller and memory for parallel transaction event processing among other devices, Ward teaches the protocol handler tasks for controlling data formatting and timing between devices communicating in an on-line network. In order for an ATM to properly operate, the peripherals function in a ordered sequence and therefore they do operate in response to signals generated by the peripheral devices whose operation comes beforehand in the sequence).

6. Regarding claim 21, Ward disclosed the limitations, substantially as claimed, as described in claim 20, including wherein the control applications communicate with each other using a peer-to-peer communication protocol (Ward, col. 3, lines 20-25, Fig. 2).

7. Regarding claim 23, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein the control applications communicate with each other using signals addressed directly to selected peripheral devices so that a peripheral device only communicates with those peripheral devices whose operation depends on or is connected with the state of that peripheral device (Ward, col. 3, lines 40-60, col. 4, lines 1-10, 30-35, Ward disclosed that the peripherals operate in a transaction sequence, meaning that a peripheral device operates according to the operation of peripheral devices that operate before it).

8. Regarding claim 34, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein, in use, each of the control applications are executed on a single central processor (Ward, col. 3, lines 20-26).

9. Regarding claim 36, Ward discloses the limitations, substantially as claimed, as described in claim 20, including wherein the peripheral devices are

selected from the following peripheral devices: user interface, card reader, receipt printer, cash dispenser, and a bar code scanner (Ward, Fig. 2, 96).

In addition, the Office Action states the following:

10. Claims 22, 24-33, 35 and 37-40, 55-74, and 78-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward in view of Kraslavsky et al. (U.S. Patent Number 5,537,626).

11. Regarding claim 22, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein the control applications communicate with each other using broadcast signals in order to communicate a present state of the peripheral devices. Kraslavsky disclosed communication links that enable peripheral devices of a terminal to communicate with each other through broadcasting (Kraslavsky, col. 14, lines 5-22). It would have been obvious to one in the ordinary skill in the art at the time of the invention to incorporate the communication links of Kraslavsky into the invention of Ward in order to enable the peripheral devices of a terminal to communicate with one another, eliminating the need to use the Peripheral Control Unit.

12. Regarding claim 24, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein a control application that operates in response to a signal communicated from another peripheral device acknowledges receipt of that signal. Kraslavsky disclosed peripheral devices responding to broadcast signals (Kraslavsky, col. 14, lines 5-15). See motivation above.

13. Regarding claim 25, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 20, including wherein each control application is operable to identify any failed peripheral device that does not acknowledge receipt of a signal, and to communicate the functional state of that failed peripheral device to other control applications (Kraslavsky, col. 14, lines 5-15). See motivation above.

14. Regarding claim 26, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein each peripheral device uses a registry for maintaining a record of the functioning peripheral devices in the terminal. Kraslavsky disclosed keeping statistics and a log of the devices (Kraslavsky, col. 14, lines 5-15). See motivation above.

15. Regarding claim 27, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein the control applications implement a team building process for indicating their availability. Kraslavsky disclosed peripheral devices indicating availability (Kraslavsky, col. 14, lines 5-15). See motivation above.

16. Regarding claim 28, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 27, including wherein as part of the team building process, each control application associated with an available peripheral device transmits a start-up signal (Kraslavsky, col. 14, lines 5-15). See motivation above.

17. Regarding claim 29, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 28, including wherein the start-up

signal includes an identifier for the peripheral device being initialized and an address at which the peripheral device receives signals (Kraslavsky, col. 14, lines 5-15). See motivation above.

18. Regarding claim 30, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 29, including wherein the start-up signal is broadcast to other peripheral devices (Kraslavsky, col. 14, lines 5-15). See motivation above.

19. Regarding claim 31, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 30, including wherein the start-up signal is communicated directly to predetermined addresses that correspond to other peripheral devices (Kraslavsky, col. 14, lines 5-15, col. 17, lines 30-45). See motivation above.

20. Regarding claim 32, Ward disclosed the limitations, substantially, as claimed, as described in claim 20. Ward did not explicitly state wherein the control application associated with each peripheral devices creates a functional group registry, comprising the addresses and identity of each peripheral device that has sent a startup signal. Kraslavsky disclosed logging device information from startup signals received (Kraslavsky, col. 14, lines 5-15). See motivation above.

21. Regarding claim 33, Ward and Kraslavsky disclosed the limitations, substantially as claimed, as described in claim 32, including wherein each control application transmits a shut-down signal when its peripheral device is no longer able to operate properly; each control application being operable to modify its functional group registry in response to a shut-down signal from another peripheral device to indicate the removal of that peripheral device from operation (Kraslavsky, col. 14, lines 5-15, 30-45).

22. Regarding claim 35, Ward disclosed the limitations, substantially as claimed, as described in claim 20. Ward did not explicitly state wherein, in use, each of the control applications is executed on a processor within its associated peripheral. Kraslavsky disclosed a printer containing its own processor and running applications (Kraslavsky, col. 14, lines 5-45).

23. Claims 37-40, 55-74, and 78-81 include limitations similar to the limitations found in claims 20-36, and are therefore rejected under the same art as claims 20-36 as being substantially similar.

Finally, the Office Action provides the following comments:

Response to Amendment

Applicant's arguments and amendments filed on 19 January 2005 have been carefully considered but they are not deemed fully persuasive.

Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not considered persuasive.

Regarding the independent claims of the invention, a discussion about peripheral devices in a terminal should be made to clarify Examiner's interpretation. The definition of a peripheral device is a computer device that is connected to a computer and is controlled by the computer's processor. By Applicant's arguments concerning the peripheral devices of the claimed invention, it is clearly misunderstood as to what a peripheral device is. The definition as stated above

shows that a peripheral device is a device that is connected to a computer and controlled by that computer. In terms of Applicant's arguments regarding the claimed invention, Applicant argues that the peripheral devices control themselves. If this is the case, the devices that Applicant is referring to are not accurately defined as peripheral devices, being that they are not controlled by a computer. Applicant should go into further detail in the independent claims explaining the functionality of these peripheral devices to clarify the operation of the peripheral devices not only with each other, but with the computer in control (i.e. the terminal).

Examiner understands what Applicant is trying to claim, however the claims as currently presented may be interpreted differently. The independent associated control applications, as stated in the first action, can be interpreted as device drivers, which allow communication between peripheral devices. Being that the environment is an ATM, it is well known that peripheral devices act in sequence with one another, and the operation of one peripheral device is dependent on the operation of the previous peripheral device. It is also well known that peripheral devices are at the same level (i.e. peers), and that they communicate through broadcasting.

Furthermore, as it is Applicant's right to continue to claim as broadly as possible their invention, it is also the Examiner's right to continue to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to differentiate in detail how these features are unique.

It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art.

Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

Applicants' attorney submits that the claims have been amended sufficiently to clarify the distinctions between the Applicant's invention and the cited prior art references.

Consider, for example, the portions of Ward cited above, which are reproduced below:

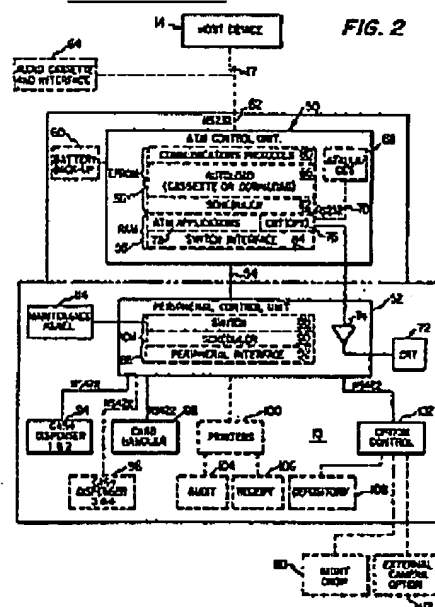
Ward: Col. 2, lines 35-60 (actually, col. 2, line 29 – col. 3, line 3)

Accordingly, the present invention is directed to a method and apparatus for reducing the time required to complete an ATM transaction. Generally, such reduction is achieved through utilization of "smart" or intelligent peripherals associated with the ATM and a novel task handling system. As used herein, the term "peripheral" refers to the various input/output devices used with the ATMs; e.g., the card handler, printer, cash dispenser, etc. Each of the peripheral devices includes a subsystem controller having a dedicated processor and memory for facilitating parallel transaction event processing among the devices. As used herein, "transaction events" refers to those events which occur during a transaction; e.g., "Asking for PIN," "Transaction Selection," "Dispense Cash," etc. In accordance with the present invention, the sequence of events that occur during a transaction may be altered by

the financial institution through modification of a Transaction Sequence Table stored in the operating system of the ATM.

Specifically, the method and apparatus of the present invention separates transaction events into two groups: a command/request event group and a response/status event group. The method of activating parallel activity of the peripheral devices is to initiate as many command/request events as possible before following them in the Transaction Sequence Table with their corresponding response/status events, such events causing a "wait state" to occur during the transaction. For example, after a card is detected by the card handler mechanism, the ATM may simultaneously perform the following command/request events: printing header information on the customer receipt, retrieving card data from the encoded magnetic stripe and requesting the customer to enter his/her personal identification number. Likewise, after PIN entry and validation, and transaction selection and host authorization, the ATM may perform the following command/request events simultaneously: printing the transaction description on the print receipt and dispensing currency. Therefore, since the command/request and response/status events occur simultaneously, overall customer transaction time is reduced.

Ward: FIG. 2



In the above portions, Ward merely discloses an automated teller machine (ATM) having various "smart" peripheral devices associated therewith. However, in Ward, each peripheral device associated with the ATM, is under the direct control of the ATM (specifically, the PCU or ACU) and there is no capability for these peripheral devices to also communicate directly with other peripheral devices independently of the ATM. Specifically, Ward does not teach or suggest that

peripheral devices communicate directly with other peripheral devices independently, as well as under the control of a central processor.

Applicants' independent claims 20, 37 and 40, on the other hand, recite that a plurality of peripheral devices in the self-service terminal that are connected to a central processor for the terminal and controlled by that central processor, wherein each peripheral device has an independent associated control application, and the independent associated control applications operate to communicate with each other; whereby, in use, a peripheral device operates in response to a signal generated by the central processor of the self-service terminal or another peripheral device.

Kraslavsky fails to overcome these deficiencies of Ward. Recall that Kraslavsky was cited only against some of the dependent claims, and only for the purposes of describing communications links between peripheral devices that allow the peripheral devices to communicate with one another.

Thus, the references, taken individually or in combination, fail to teach the Applicants' claimed invention. Further, the various elements of the Applicants' claimed invention together provide operational advantages over the systems disclosed in the references. In addition, Applicants' invention solves problems not recognized by the references. Consequently, Applicants submit that claims 20-40 are allowable over the references.

V. Conclusion

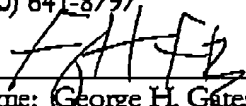
In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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